

P025 A novel mode of GEF-GTPase interaction drives Rac1 targeting and activation by β -Pix

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The Rho-like GTPase Rac1 controls cell adhesion, spreading and migration. Efficient signaling requires Rac1 localization at the plasma membrane, but the mechanism that controls the membrane targeting of Rac1 is unknown. Here we show that Rac1, via a proline stretch in its C-terminus, binds to the SH3 domain of the Cdc42/Rac activator β -Pix. This interaction is necessary and sufficient for Rac1 recruitment to the plasma membrane and to focal adhesions and for its activation by β -Pix. Moreover, we show that activated Cdc42, through Pak1, controls the β -Pix-Rac1 interaction. These data provide a model for the targeting and activation of Rac1 through a Cdc42-Pak- β -Pix axis.